



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/798,004

03/12/2004

Robert A. Gonsalves

RG-3

5175

76312

7590

10/26/2009

ROBERT A. GONSALVES  
12 LEXINGTON STREET  
WOBURN, MA 01801

EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

10/26/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |   |  |
|------------------------------|--------------------------------------|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/798,004 | <b>Applicant(s)</b><br>GONSALVES, ROBERT A. |  |
|                              | <b>Examiner</b><br>LUONG T. NGUYEN   | <b>Art Unit</b><br>2622                     |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. In the Amendment filed on 06/19/2009, the Applicant amended claims 1-2 and stated that there is no Remarks or Comments; the Examiner considers that claim 1 as amended still does not distinguish from Gonsalves et al. reference, therefore claim 1 is still rejected under 35 U.S.C. 102(b) as being anticipated by Gonsalves et al. (US 4,309,602).

In addition, Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

#### ***Claim Objections***

2. Claims 1-2 are objected to because of the following informalities:

Claim 1 (line 4), "the optical medium" should be changed to --an optical medium--.

Claim 1 (line 5), "the object" should be changed to --an object --.

Claim 1 (line 6), "said digital images" should be changed to --said solely adapted in-focus digital images--.

Claim 2 (line 1), "The camera" should be changed to --The video camera--.

Claim 2 (line 3), "as diverse images" should be changed to --as the diverse images--.

Claim 2 (line 4), "said solely adapted in-focus digital image" should be changed to --a solely adapted in-focus digital images --.

Further, in the next communication, in the Amendment to the Claims, "claims 3 and 4 (Canceled)" should be changed to --claims 3-9 (Canceled)--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Gonsalves et al. (US 4,309,602).

Regarding claim 1, Gonsalves et al. discloses a video camera with enhanced image clarification comprising:

an imaging system (see figure 1, column 3, lines 15-33) with an adaptive optic device (adaptive optics 11, figure 1, column 3, lines 15-33. Noted that since Gonsalves et al. discloses adaptive optics 11 may comprise a matrix of controllable reflecting surfaces which may be controlled by control system 17 to vary the delay of incident radiant energy so as to reduce the wave front error signal, column 3, lines 18-47, this indicates that adaptive optics 11 has a function of canceling aberrations) arranged for canceling aberrations introduced by the optical medium to produce solely adapted in-focus digital images;

a sequential diversity processor (image signal processor 15 and control system 17, figure 1, column 3, lines 15-47) using said digital images as diverse images and using changes in said adaptive optic device as diversities to calculate control signals for said adaptive optic device.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Love et al. (US 6,107,617).

Art Unit: 2622

Regarding claim 1, Love et al. discloses a video camera with enhanced image clarification comprising:

an imaging system (see figure 3, column 3, lines 25-41) with an adaptive optic device (a liquid crystal spatial light modular 4 (LC SLM), figures 2-3, column 3, lines 25-41) arranged for canceling aberrations introduced by the optical medium to produce solely adapted in-focus digital images;

a sequential diversity processor (data processor, figures 2-3, column 3, lines 25-41) using said digital images as diverse images and using changes in said adaptive optic device as diversities to calculate control signals for said adaptive optic device.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Campbell (US 6,910,770).

Regarding claim 1, Cambell discloses a video camera with enhanced image clarification comprising:

an imaging system (see figures 1, 6, wavefront measurement system 10, column 3, lines 40-63) with an adaptive optic device (adaptive optic 22, figures 1, 6, column 4, lines 19-33)

Art Unit: 2622

arranged for canceling aberrations introduced by the optical medium to produce solely adapted in-focus digital images;

a sequential diversity processor (computer controller 28, figures 1, 6, column 4, lines 50-64) using said digital images as diverse images and using changes in said adaptive optic device as diversities to calculate control signals for said adaptive optic device.

***Allowable Subject Matter***

8. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, the prior art of the record fails to show or fairly suggest a video camera with enhanced image clarification comprising:

wherein said sequential diversity processor utilizes diversity  $D(k-1)$ , the diversity at time  $k-1$ , along with current and previous digital images,  $I(k)$  and  $I(k-1)$ , as diverse images to produce  $Q(k-1)$ , an estimate of the residual aberrations in said solely adapted in-focus image of said object at time  $k-1$ ; wherein said sequential diversity processor sets diversity  $D(k)$  to the negative of that estimate, that is,  $D(k) = -Q(k-1)$ ; and wherein  $T(k-1)$ , the signal produced by the sequential diversity processor to control the adaptive optic device at time  $k-1$ , is added to  $D(k)$ , to produce a control signal at time  $k$ , that is,  $T(k) = T(k-1) + D(k)$ , which also implies that  $D(k) = T(k) - T(k-1)$ .

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571)272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2622

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LUONG T NGUYEN/  
Examiner, Art Unit 2622  
10/22/09